

REMARKS

Applicants are submitting this Amendment and Response in reply to the Official Action dated March 30, 2009. Applicant respectfully submits that the Amendment and Response is fully responsive to the Official Action for at least the reasons set forth herein.

At the onset, Applicants note that claims 1, 4 and 7 have been amended herewith. Claim 4 has been amended to correct a typographical error. Claims 1 and 7 have been amended for clarification. Notably, the radio reception unit which outputs a radio reception output for an uplink communication channel.

No new matter has been added to the application by way of the aforementioned amendments. For example, Applicants direct the Examiner's attention to pages 17 and 18. Applicants note that the identified section is presented for the Examiner's convenience and is not intended to be an exhaustive list.

Applicants submit that the amendment to claim 4 obviates the objection. Therefore, Applicants respectfully request withdrawal of the objection.

Applicants further submit that the amendments to claims 1 and 7 obviate the rejection of claim 1 under 35 U.S.C. § 112, second paragraph. Withdrawal of the rejection is respectfully requested. Further, Applicant notes that the interpretation set forth in the Official Action for the "radio reception unit is incorrect". The Official Action states that the Examiner interprets the radio reception unit to be a mobile terminal device.

Applicants respectfully disagree. Notably, the Examiner correctly states that uplink communication channel is communication from the mobile terminal to the base station. Uplink transmission power control is the operation of comparing the uplink reception SIR (Signal to

Interference Ratio) in a base station with a predetermined threshold, performing uplink transmission power increase control if the SIR is smaller than the threshold, and performing uplink transmission power decrease control if the SIR is larger than the threshold. Page 16, line 20-Page 17, line 1.

The radio reception unit receives a signal from the uplink communication channel and outputs a processed signal to the channel estimation circuit. The signal in the uplink communication channel includes information from an individual channel occupied by each user and a shared channel shared among all users.

The specification states that the invention assumes that when each user terminal communicates with a base station by using the CDMA scheme, the individual CH occupied by each user and the shared CH shared among all the users are used as uplink communication CHs.

Additionally, the specification describes that “the radio reception unit RX comprises a low-noise amplifier, band limiting filter, mixer, local oscillator, AGC (Auto Gain Controller), quadrature detector, low pass filter, analog/digital converter, and the like (not shown). The radio reception unit RX receives a signal in the radio band which is received by the reception antenna unit RA, performs amplification of the input signal, frequency conversion from the radio band to the baseband, quadrature detection, analog/digital conversion, and the like, and outputs the resultant data to the user k demodulation block 1.” Pages 17, line 24- Page 18, line 8.

Claims 1-5 and 7-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung, U.S. Patent No. 6,452,917 in view of Kikuchi, U.S. Pat. Pub. 2003/0043775.

Applicants respectfully disagree with the rejection and traverse with at least the following analysis.

While Kikuchi appears to recognize the problem of having a time offset between two channels with transmission power control causing a reception power fluctuation, the solution to the problem is substantially different, and in fact would not work in the claimed invention. In other words, if one of ordinary skill in the art would combine the references to arrive at the claimed invention, the combination would be inoperable for its intended use. The correction circuit in Kikuchi requires two different pilot signals, one in each channel. If one or combine the prior art and only use one pilot signal, the correction would not work.

For example, Kikuchi states:

[t]herefore, in the channel estimation apparatus 23 in the present embodiment, both of the **extrapolation pilot signal and the interpolation pilot signal are used as pilot signals for use for estimation of a phase rotation amount**. In particular, since the channel estimation apparatus 23 estimates the phase rotation amount in accordance with the expression (1) given hereinabove, the precision in estimation of the phase rotation amount can be improved and the stability can be assured without depending upon conditions of the TPC, and a good reception sensitivity is assured as the reception sensitivity after the phase correction.

Paragraph 0110

Additionally, the reference asserts that:

[t]he extrapolation pilot signal enables channel estimation at a timing same as that of received data and is considerably advantageous from a point of view of a circuit. However, the SIR of the extrapolation pilot signal is deteriorated by the communication channel itself increased by the TPC (transmission power control) as described hereinabove with reference to FIG. 5. In other words, control for raising the sensitivity deteriorates the sensitivity conversely.

Incidentally, the interpolation pilot signal allows channel estimation only at timings before and after a signal to be demodulated. In order to raise the precision, an averaging process is required, and the interpolation pilot signal is inferior also in characteristic to the extrapolation pilot signal.

Paragraphs 0107-0108.

Therefore, the reference clearly teaches that in order to correct for the error, pilot signals in **both** channels are needed.

In stark contrast, the claimed invention only uses a pilot signal in the individual user channel for correction. In fact, in the claimed invention a pilot signal is not included in the shared channel.

Notably, the instant application describes that each slot comprises a Pilot portion and a Data portion (individual user channel). The Pilot portion accommodates a known symbol sequence determined for each slot in advance and is used to estimate a channel necessary for the demodulation of the Data portions of the individual CH and shared CH. The Data portion accommodates user data. The shared CH comprises **only a Data portion**. The Data portion accommodates user data. **Since no Pilot portion exists in the shared CH, the shared CH can accommodate more user data than the individual CH. See page 15 and 16.**

Therefore, since there is only one pilot signal in the claimed invention and the prior art must use two, the prior art references cannot be combined to teach the claimed invention.

Accordingly, Applicants submit that the claimed invention, as set forth in claims 1-5 and 7-11 are patentable over the cited combination.

Applicants further submit that claims 2 and 8 are patentable over the cited combination based at least upon the following additional reasons.

The combined references fail to teach differentiating between the timing offset interval and before and after the timing offset interval as recited in claims 2 and 8, e.g., by estimating a reception power fluctuation corresponding to an uplink power control command *in a timing offset interval*.

The instant application describes that “the correction coefficient calculation circuit 20 then calculates a reception power difference correction coefficient β which cancels out a reception power fluctuation due to uplink transmission power control in a timing offset interval by using a timing offset and an estimated reception power fluctuation due to uplink transmission power control, and outputs the calculated coefficient to the correction circuit 22.

$\beta = \text{CTPC} - 1$ (inside the timing offset interval)

$\beta = 1$ (outside the timing offset interval).” See page 28.

Additionally, claims 6 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leung in view of Kikuchi in further view of Chow, U.S. Pat. Pub. 2005/0213529.

Applicants respectfully disagree with the rejection and traverse with at least the following analysis.

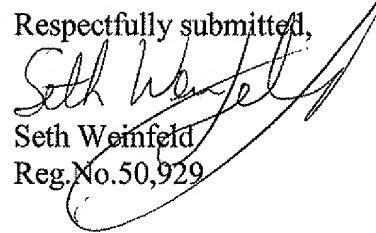
Applicants submit that Chow is not prior art. The filing date of Chow is January 13, 2005, which is after the effective filing date for the instant application. The application was filed as a PCT application on February 18, 2005 and the PCT claimed the priority of a Japanese Patent application which was filed on February 27, 2004.

Accordingly, Chow is not prior art.

Based upon the foregoing, Applicants respectfully request the Examiner to withdraw the rejections of claims 1-12 pursuant to 35 U.S.C. § 103(a).

Applicants submit that the application is in condition for allowance and henceforth solicits a Notice of Allowability. Should the Examiner believe that the telephone interview would expedite prosecution of this application, the Examiner is kindly requested to contact the undersigned at the number listed below.

Respectfully submitted,


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